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ABSTRACT:

The invention relates to an X-ray detector which includes at least one conversion unit (1) for converting absorbed X-ray quanta into electric charge signals, at least one evaluation unit (10) for amplifying and further processing the charge signals, and at least one data processing unit (11) for the acquisition, further processing and output of data. The charge signals are first amplified by an input amplifier (2) in the evaluation unit (10) after which they are evaluated in parallel in a counting channel (5) as well as in an integrator channel (7). The charge signals are then counted in the counting channel and the overall charge is integrated in the integrator channel as a measure of the energy delivered in the conversion unit (1). Because of the parallel presentation of the counting results and the integration results, more weight can be attached thereto in their respective range of the quantum flow that is optimum from a measuring point of view, so that the dynamic range of the X-ray detector is enlarged. Furthermore, additional information, for example, the mean absorption energy of the X-ray quanta, can be determined from the combination of the signals.

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Figure

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